licensed operation and vice versa. The method requires only simple circuitry and little energy consumption in the mobile parts. Initial monitoring is carried out in the base station, which supports uncoordinated, unlicensed system operation. - -

REMARKS

A substitute specification is provided herewith which make editorial changes in order to conform to standard US practice. A marker-up copy of the specification is also provided reflecting the changes made.

In addition, the claims as filed have been cancelled and replaced by new claims that more clearly set forth the subject matter of Applicant's invention.

No new matter has been inserted in the application.

Applicant submits that this application is in proper condition for examination in the United States national Examination Phase, which action is respectfully requested.

Respectfully submitted,

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~~{Description}~~ **[Substitute Specification:]**

~~{Method for controlling the handover of telecommunications connections between mobile parts and base stations in cellular telecommunications systems using}~~**[- -METHOD FOR CONTROLLING HANDOVER OF TELECOMMUNICATIONS CONNECTIONS BETWEEN MOBILE PARTS AND BASE STATIONS IN CELLULAR TELECOMMUNICATIONS SYSTEMS**

BACKGROUND OF THE INVENTION

Field of the Invention

In general, the present invention pertains to the field of wireless telecommunications. In particular, the present invention pertains to] wireless telecommunication **[system handover controls. Discussion of the Related Art]**

Telecommunications systems using wireless telecommunication between mobile and/or stationary transmitting/receiving appliances are specific message systems with a message transmission path between a message source and a message sink~~{, in which, for example}~~**[. In these systems]**, base stations and mobile parts are used as transmitting and receiving appliances for processing and transmitting messages~~{, and}~~ in which {

~~1)~~ the message processing and message transmission can be carried out in a preferred transmission direction (simplex operation) or in both transmission directions (duplex operation), ~~{~~

~~2)~~ the message processing is preferably digital **[and]**~~{~~,

~~3)~~ messages are transmitted via ~~{the}~~ **[a]** long-distance transmission path without using wires**[.**

The message processing and transmission is] based on various message transmission methods **[to allow]** for multiple use of ~~{the}~~ message transmission ~~{path}~~ **[pats, such as]** FDMA (Frequency Division Multiple Access), TDMA (Time Division Multiple Access) ~~{and/or}~~ **[or]** CDMA (Code Division Multiple Access) ~~{for example}~~**[. For instance,]** in accordance with ~~{Radio Standards}~~ **[standards]** such as ~~{~~ }DECT ~~{}~~Digital Enhanced ~~{(previously: European)}~~ Cordless Telecommunication~~{; see}~~**[, as discussed in]** Nachrichtentechnik Elektronik [Information Technology, Electronics] 42 (1992) Jan/Feb, No. 1, Berlin, ~~{DE;}~~ **[Germany, or in]** U. Pilger "Struktur des DECT-Standards" [Structure of the DECT Standard], pages 23 to 29 in conjunction with ETSI Publication ETS 3001750-1~~{...}~~ **[October]** 9, ~~{October}~~ 1992 and the DECT Publication from the DECT Forum, February 1997, pages 1 to 16], GSM [Groupe Special Mobile or Global System for Mobile Communication~~{; see}~~**[. See also,]** Informatik Spektrum [Information Technology Spectrum] 14 (1991) June, No. 3, Berlin, DE; ~~{~~

}A. Mann: "Der GSM-Standard - Grundlage für digitale europäische Mobilfunknetze", [The GSM Standard - Basis for ~~{digital}~~ **[Digital]** European ~~{mobile radio networks]}~~ **[Mobile Radio Networks]**, pages 137 to 152 in conjunction with the publication ~~{telekom praxis 4/1993}~~ **[Telekom Praxis, April 1993]**, P. Smolka "GSM-Funkschnittstelie - Element und Funktionen", [GSM radio interface - Elements and functions], pages 17 to 24, {

}UMTS [Universal Mobile Telecommunication System~~{; see (1):}~~**[. Further discussion is provided by]** Nachrichtentechnik Eiektronik, [Information Technology Electronics], Berlin 45, 1995, Issue 1, pages 10 to 14 and Issue 2, pages 24 to 27~~{;}~~**[, and by]** P. Jung, B. Steiner: "Konzept eines CDMA-~~{Mobiifunksystems}~~ **[Mobiifunk-systems]** mit gemeinsamer Detektion ~~{für die dritte Mobiifunkgeneration}~~ **[Für Die Dritte Mobiifunk-generation]**" [Concept of a CDMA ~~{mobile radio system with joint detection for third generation mobile radio]; (2):}~~ **[Mobile Radio System with Joint Detection for Third Generation Mobile Radio], and by]** Nachrichtentechnik Eiektronik, [Information Technology, Electronics], Berlin 41, 1991, Issue 6, pages 223 to 227 and page 234; P.W. Baier, P. Jung, A. Klein: "CDMA - ein günstiges Vieifachzugriffsverfahren für frequenzselek tive und zeitvariante Mobilfunkkanäle"; [CDMA - A ~~{useful multiple access method for frequency-selective and time-variant mobile radio channels]; (3):}~~ **[Useful**

Multiple Access Method For Frequency-Selective and Time-Variant Mobile Radio Channels]. Further discussion is given in] IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, Vol. E79-A, No. 12, December 1996, pages 1930 to 1937~~{;}~~**[, and]** P.W. Baier, P. Jung: "CDMA Myths and Realities Revisited"~~{; (4):}~~**[, and]** IEEE Personal Communications, February 1995, pages 38 to 47~~{;}~~**[. Aslo see,]** A. Urie, M. Streeton, C. Mourot: "An Advanced TDMA Mobile Access System for UMTS"~~{; (5): telekom praxis, }~~**[, Telekom Praxis,]** 5/1995, pages 9 to 14; P.W. Baier: "Spread-SpectrumTechnik und CDMA - eine ursprünglich militärische Technik erobert den zivilen Bereich" [Spread ~~{spectrum technology and CDMA - an originally military technology wins over the civil area]; (6):}~~ **[Spectrum Technology and CDMA - An Originally Military Technology Wins Over the Civil Area], and in]** IEEE Personal Communications, February 1995, pages 48 to 53~~{;}~~**[, in]** P.G. Andermo, L.M. Ewe rbring: "An CDMA -Based Radio Access Design for UMTS"~~{; (7):}~~**[, in]** ITO Fachberichte [Specialist Report] 124 (1993), Berlin, Offenbach: VDE Verlag ISBN 3-8007-1965-7, pages 67 to 75~~{;}~~**[, and in]** Dr. T. Zimmermann, Siemens AG: "Anwendung von CDMA in der Mobilkommunikation" [Use of CDMA in ~~{mobile communication]; (8): telcom report}~~ **[Mobile Communication]. Also see, Telecom Report]** 16, (1993), Issue 1, pages 38 to 41~~{;}~~**[, a paper by]** Dr T. Ketseoglou,

Siemens AG and Dr. T. Zimmermann, Siemens AG: "Effizienter Teilnehmerzugriff für die ~~{3.}~~ **[3rd]** Generation der Mobilkommunikation - Vielfachzugriffsverfahren CDMA macht Luftschnittstelle flexibler"; [Efficient ~~{subscriber access for 3rd generation mobile communication - the CDMA multiple access method makes the air interface more flexible]; (9):}~~ **[Subscriber Access for 3rd Generation Mobile Communication - The CDMA Multiple Access Method Makes the Air Interface More Flexible], and]** Funkschau 6/98: R. Sietmann "Ringen um die UMTS-Schnittstelle" [Ringing ~~{round}~~ **[Round]** the UMTS ~~{interface}~~ **[Interface]**], pages 76 to 81] WACS or PACS, IS-54, IS—95, PHS, PDC etc.~~{{see}~~**[, as well as]** IEEE Communications Magazine, January 1995, pages 50 to 57~~{;}~~**[, and]** D.D. Falconer et al: "Time Division Multiple Access Methods for Wireless Personal Communications~~{"].}~~**[."]**

~~{Message}~~ **[The word message]** is a generic term which covers not only the information content but also the physical representation of its signal. Despite a message having the same information content, different signal forms may occur. Thus, ~~{for example,}~~ a message relating to one item can be transmitted {

~~(1)}~~ in the form of an image, {

~~(2)}~~ as ~~{the}~~ spoken word, {

~~(3)}~~ as ~~{the}~~ written word**[, or]**~~{(4)}~~ as an encrypted word or image.

Transmission types ~~{(1) ... (3) are in this case}~~ **[are]**normally characterized ~~{by}~~ **[as]** continuous (analog) signals, while discontinuous signals~~{(for example}~~**[, although]** pulses, digital signals ~~{) normally occur in transmission type (4)}~~ **[may also be used]**.

In telecommunications systems of the type mentioned above, the ~~{handover and}~~ handover of an ongoing call or connection is a highly time-critical process, since the continuity of ongoing connections must be ensured. ~~{Particularly in telecommunications systems using wireless telecommunication, various situations or cases occur in which a handover or a handover is possible, or even necessary. Corresponding to these situations a distinction is drawn, for example,}~~ **[In particular, a distinction is often required]** between an intracell handover, an intercell handover and an external handover ~~{etc}~~.

In order to carry out a handover~~{, for example,}~~ **[between]** a mobile ~~{transmitting/receiving}~~ **[transmitting/ receiving]** appliance, ~~{for example}~~ **[such as]** a mobile station or a mobile part ~~{which is}~~ connected to a stationary transmitting/receiving appliance, ~~{for example}~~ **[and]** a base station or a fixed part in a cell, ~~{requires}~~ cell-specific information about the adjacent cell, or about a number of adjacent cells **[is required]**. The method used to receive this information is referred to as monitoring, ~~{that is to say}~~ **[wherein]** the mobile station monitors~~{, for example,}~~ a control channel, the so-called Broadcast Control CHannel (BCCH) on which the

cell-specific information ~~{mentioned above}~~ is broadcast by the base station.

One problem **[with this method]** relates to how the mobile station obtains the required cell-specific information and the current parameters, ~~{that is to say}~~ **[such as,]** frequency, timeslot, **[and the]** code of the adjacent base station to which the connection is intended to be transferred by the handover procedure and to which the handover is then intended to be made, when the mobile station is in an uncoordinated, unlicensed scenario~~{- for example in}~~**[. Such a scenerio involves]** an arrangement where there are a large number of unsynchronized residential base stations~~{-}~~**[,]** or in a purely coordinated, licensed cellular scenario~~{- for example as}~~**[, say]** in the **[case of a]** TDD-UMTS system~~{- and, due to a high data rate,}~~**[, the scenario involves]** virtually all the physical channels ~~{are}~~ occupied by data traffic ~~{and}~~ **[which makes]** it ~~{is thus}~~ **[almost]** impossible to receive the Broadcast Control CHannel of the adjacent base stations **[due to high data rates encountered.**

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method for telecommunications connections to be handed off from uncoordinated, unlicenced operation to coordinated, licensed operation.

It is another object of the invention to provide a method for initial monitoring in a base station supporting uncoordinated, unlicensed system operation.

It is an additional object of the invention to provide a method to carry-out a time-critical handover from indoor to outdoor.

It is a further object of the invention to provide a method for initial monitoring where high asymmetric data rates are used.

These and other objects of the invention will become apparent upon careful review of the following disclosure, which is to be read in conjunction with review of the accompanying drawing figure.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a universal mobile telecommunications network;

Figure 2 shows a modified universal mobile telecommunications network;

Figure 3 shows a mobile station according to the present invention;

Figure 4 shows another mobile station according to the present invention; and

Figure 5 shows another mobile station according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT]{~

}

Figure 1 shows one possible UMTS scenario (Universal Mobile Telecommunication System) with a multicell universal mobile telecommunications system**[.]** UMTS ~~{which}~~ operates using both the uncoordinated, unlicensed system mode and the coordinated, licensed system mode ~~{and includes both the scenarios mentioned above. The illustrated UMTS system }~~**[.**

The UMTS system shown in Figure 1] has a first telecommunications subsystem TKTSI which operates in first radio cells FZI using wireless telecommunication between a first base station BS1, ~~{which is}~~ in the form of an indoor base station, and n ~~{(nεN)first}~~ mobile stations, MS1... . ~~{MSn, which}~~ **[Msn. The mobile stations, MS1 ... MSn]**are preferably in the form of indoor/outdoor mobile stations, and ~~{which system is operating}~~ **[are operated]** in the uncoordinated, unlicensed system mode. ~~{Furthermore, the}~~ **[The]** UMTS system has a second telecommunications subsystem TKST2, which operates in second radio cells FZ2, using wireless telecommunication between a second base station BS2, which is **[also]** in the form of an outdoor base station, and m ~~{(mεN)}~~ second mobile stations ~~{MSn+1. . .MSn+m, which}~~ **[Msn+1 . . . Msn+m. The base stations, Msn+1 . . . Msn+m,]** are preferably in the

form of indoor/outdoor mobile stations, and ~~{which system is operating}~~ **[are operated]** in the coordinated, licensed system mode.

~~{~~

~~A further problem is how the monitoring for a handover from uncoordinated, unlicensed system operation to coordinated licensed system operation must appear.~~

~~}~~A mobile assisted handover is carried out in the known GSM scenario. ~~{The monitoring is in this case}~~ **[Monitoring is]**carried out by the mobile station during the free timeslots~~{, that}~~**[. That]** is to say**[, when]** the mobile station autonomously receives the ~~{Broadcast Control CHannels}~~ **[BCCH]** of the adjacent base stations~~{,}~~**[. The mobile station]** selects that base station whose reception quality is the best, and signals this to its own base station. The handover ~~{is}~~ in this case **[is]** initiated by the mobile station and is controlled by the base station~~{, this}~~**[. This]** is ~~{therefore}~~ referred to as a mobile assisted handover. A ~~{factor which is of}~~ critical ~~{importance}~~ **[factor]** in this case is for the mobile station to have already received advance information from the network operator, **[and]** on its active ~~{Broadcast Control CHannel}~~ **[BCCH]** on the frequencies to be searched ~~{for the Broadcast Control CHannels of}~~ **[in]** the adjacent base stations.

In contrast to the GSM scenario, a mobile initiated and mobile controlled handover is carried out ~~{in}~~ **[according to]** the ~~{known}~~ DECT

scenario. ~~{The monitoring}~~ **[Monitoring]** is in this case carried out by the mobile station, and the handover is likewise controlled by the mobile station. The mobile station in this case has no advance information about which channels~~{- that is to say}~~**[, i.e.]** which frequencies/timeslots - must be looked for during monitoring for the Broadcast Control CHannels of the adjacent cells. The ~~{Broadcast Control CHannels}~~ **[BCCH]**, according to the DECT terminology, correspond to the channels in which ~~{the}~~ dummy bearer information is transmitted.

A mobile assisted handover is likewise planned, as for the GMS scenario, for the cellular UMTS scenario, which is currently subject to standardization. The monitoring is carried out by the mobile part, and the handover is initiated by the mobile station and is controlled by the base station. It is highly probable that advance information from the network operator will also be required in this case about which channels [lacuna] (these are essentially the codes, since the frequency reuse is unity).

In all the scenarios mentioned above, the monitoring is carried out by means of the mobile station.

The problem of initial monitoring ~~{(}~~**[,such as]** information about channels on which the Broadcast Control ~~{CHannel}~~ **[Channel]** of the adjacent cells can be received~~{)}~~**[,]** has until now been solved in the cellular field by means of advance information provided in advance by the network operator and intended for the respective mobile station, with this

advance information having been transmitted to the relevant mobile station by the active base station using the Broadcast Control CHannel. The only exception is the DECT scenario, since, in this case, there is no need for initial monitoring for the coordinated, licensed mode. It is thus necessary during cellular DECT operation for the mobile station to continuously scan adjacent frequencies looking for the Broadcast Control CHannel for an intercell handover. However, with respect to standby times, this is not an optimum solution ~~{[lacuna]}~~ **[with respect to]** asymmetric data services ~~{(}~~**[and]** allocation of a number of timeslots~~{)}~~. In uncoordinated DECT operation, only an intracell handover is possible, so that there is no need for initial monitoring.

In the past, no handover has existed from uncoordinated, unlicensed system operation to coordinated, licensed system operation ~~{(for example)}~~ **[such as]** residential TDD—UMTS system to the public FDD-UMTS or public TDD-UMTS system.

~~{The object on which the invention based, in a cellular telecommunications system using wireless telecommunication between mobile parts and base stations, is to provide for telecommunications connections to be handed off from uncoordinated, unlicensed operation of the telecommunications system (residential operation or private operation) to coordinated, licensed operation of the telecommunications system~~

~~(public operation) and vice versa, with little energy being consumed in the mobile part and with little circuitry complexity in the mobile part.~~

~~This object is achieved by the features of patent claim 1.~~

}The idea on which the invention is based is to carry out the initial monitoring problem, mentioned initially, in the **[first]** base station ~~{(first base station)}~~ which supports uncoordinated, unlicensed system operation.

This method offers the advantage that the ~~{Broadcast Control CHannel}~~ **[BCCH]** search by the first base station, which supports uncoordinated, unlicensed system operation and has no a priori knowledge about the conditions in the adjacent cells, need be carried out only once by base stations arranged in the adjacent cells, when the appliance is switched on, and then may be carried out once again only at relatively long periodic intervals~~{(see the advantageous development as claimed in claim 2)}~~. This information is then ~~{signalled (for example using the Broadcast Control Channel)}~~ **[signaled, such as using the BCCH]** to the mobile part or to the mobile station.

Fundamentally, the advantages for the mobile station are ~~{the}~~ reduced power consumption, ~~{the}~~ **[an]** increase in the standby time, the fact that the initial monitoring is carried out by the first base station, and ~~{the}~~ reduced complexity in the case of pure residential mobile stations or

indoor terminals~~{(}~~**[. In addition,]** the complexity is integrated in the first base station~~{).}~~**[.]**

~~{Since the first base station receives cell specific~~

~~}~~**[Since the first base station receives cell specific]** information about the adjacent public cells only as a result of the initial monitoring (and, particularly for UMTS, a highly time-consuming computation process is required in order to detect a cell—specific scrambling code without advance information) a dual mode mobile station designed for ~~{indoor/outdoor}~~ **[indoor/ outdoor]** purposes is for the first time able to carry out a particularly time-critical handover from indoor to outdoor.

~~{In the developments of the invention as claimed in claims 3 and 4, the}~~ **[The]** essential idea is for the monitoring to be carried out in the outdoor and indoor base station. Where high asymmetric data rates are used ~~{(possible only in the TDD mode)}~~ **[with TDD mode operation]**, this procedure offers advantages both for ~~{the}~~ indoor to outdoor handover and for the intracell handover. ~~{The monitoring}~~ **[Monitoring]** in the first base station can ~~{thus}~~ be used to provide an asymmetric service with a high downlink data rate and a low uplink data rate, and vice versa~~{, as well as}~~**[. Monitoring in the first base station can also be used to provide]** interference measurement on another carrier frequency and, if required, to hand over the entire asymmetric connection to the other carrier frequency~~{(interfrequency handover). }~~**[. This is known as**

interfrequency handover.] An indoor to outdoor handover while maintaining the high data rate is likewise possible.

If the monitoring functionality is integrated ~~{not only}~~ in the base station ~~{but also}~~ **[and]** in the mobile station, then an asymmetric service with a low downlink data rate and a high uplink data rate can be handed over from one carrier frequency to a carrier~~{(interfrequency handover)}~~. In this situation, the monitoring cannot be carried out by the base station since virtually all the timeslots are used for reception in this case~~{,}~~**[,]** and the monitoring is in this case carried out by the mobile station.

An exemplary embodiment of the invention will be explained with reference to Figures 2 to 7~~{, in which:}~~**[.]**

Based on the UMTS scenario ~~{with the detail from a universal mobile telecommunications network and a universal mobile telecommunications system, as shown in Figure 1, which operates}~~**[, shown in Figure 1, the telecommuni-cation system will operate]** both in the uncoordinated, unlicensed system mode and in the coordinated, licensed system mode**[.**

Specifically], Figure ~~{Z}~~ **[2]** shows a modified UMTS scenario with initial monitoring**[. The first base station BS1 and the first]**~~{, Figures 3 to 7 show timeslot illustrations for the monitoring by the base stations BS1, BS2 and the }~~ mobile stations MS1 . . **[. Msn,]**~~{.MSn, MSn+1. . .MSn+m.~~

~~Based on the UMTS scenario with the detail from a universal mobile telecommunications network and a universal mobile telecommunications system, as shown in Figure 1, which operates both in the uncoordinated, unlicensed system mode and in the coordinated, licensed system mode, Figure 2 shows a modified UMTS scenario with initial monitoring,~~

~~In the modified UMTS scenario, universal mobile telecommunications system, as shown in Figure 1, which operates both in the uncoordinated, unlicensed system mode and in the coordinated, licensed system mode, Figure Z shows a modified UMTS scenario with initial monitoring, the first base station BS1 and the first mobile stations MS1.. .MSn -}~~ as in the UMTS scenario in Figure 1~~{-}~~**[,]** are located in the first radio cell FZ1.

~~{Adjacent to this first base station BS1 - in which case, for example, adjacency occurs, by definition, when the}~~ **[Adjacency occurs when]**associated radio cells, **[such as]** the first radio cell FZ1 and the second radio cell FZ2, are adjacent to one another or overlap~~{- there are, firstly}~~**[. As shown in figure 2]**, the second base station BSZ, which is located in the second radio cell FZ2, which completely covers the first radio cell FZ1 with the first base station BS1, and, secondly, further second base stations BS1.1. . .BS1.6 which, although they are in the form of first base stations BS1 are referred to as further second base stations BS2 owing to their adjacency to the first base station BS1 in the first radio cell FZ1~~{, and which second}~~**[. Second]** base stations BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** are

arranged in further second radio cells FZ1.1 . . ~~{.FZ1.6}~~**[. FZ1.6]**, which are immediately adjacent to the first radio cell FZ1 with the first base station BS1**[,]** and are ~~{admittedly}~~ in the form of a first radio cell FZ1 but are referred to as further second radio cells FZZ owing to the adjacency to the first radio cell FZ1 with the first base station BS1.

For the initial monitoring, the first base station BS1, which supports uncoordinated, unlicensed system operation and is associated with the first cell, FZ1, in a first monitoring mode receives messages which are relevant for handing off telecommunications connections and which are transmitted by at least one of the second base stations BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** which are adjacent to the first base station BS1, support coordinated, licensed system operation or uncoordinated, unlicensed system operation and are each associated with the second cell FZ2, FZ1.1 . . ~~{.FZ1.6, on in}~~**[. FZ1.6. In]** each case one first telecommunications channel which is in the form of the ~~{Broadcast Control CHannel}~~ BCCH.

After this, the first base station BS1 assesses the information content and reception quality of the received messages and transmits a list, organized on the basis of the reception quality, of parameters which are required for handing over the telecommunications connection ~~{and are}~~ each associated with **[each]** one of the second base stations BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, on a second telecommunications channel

which is in the form of the ~~{Broadcast Control CHannel}~~ BCCH, to the first mobile stations MS1 . . ~~{.MSn}~~**[. MSn]** which are located in the first cell FZ1.

Figures 3 to 7 each ~~{use}~~ **[show]** a timeslot representation with eight timeslots ZS1 . . . Z58 to show the monitoring scenario for **[the base stations BS1, BSZ, BS1.1 . . . BS1.6 and the mobile stations MS1 . . . MSn, MSn+1. . . MSn+m. The base stations BS1, BSZ, BS1.1 . . . BS1.6 use a first timeslot ZS1 as the BCCH, and that there is a bidirectional, asymmetric data link at a first frequency fi in each case between]** the base stations BS1, BSZ, BS1.1. . .BS1.6 and the mobile stations MS1.. .MSn, MSn+1.~~{. .MSn+m. Common features of all the figures 3 to 7 are that the base stations BS1, BSZ, BS1.1. . .BS1.6 use a first timeslot ZS1 as the Broadcast Control Channel BCCH, and that there is a bidirectional, asymmetric data link at a first frequency fi in each case between the base stations BS1, BSZ, BS1.1. . .BS1.6 and the mobile stations MS1.. .MSn, MSn+1.}~~ . .MSn+m, said data link in each case having a number of reception timeslots Rxl and transmission timeslots Txl and in each case extending over at least the timeslots ZS2 . . . ZS6. Furthermore, ~~{for example,}~~ the expression M(f2), M(f3) in each case indicates that the base stations BS1, BS2, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** and/or the mobile stations MS1 . . ~~{.MSn, MSn+1. . ..MSn+m}~~**[. MSn,**

Msn+1 . . . MSn+m] carry out monitoring M on a second frequency fZ or on a third frequency f3.

{

~~In detail, said figures show the following information:~~

}Figure 3 shows that the mobile station MS1.. .MSn, ~~{MSn+1. . .MSn+m}~~ **[Msn+1 . . . MSn+m]** maintains a bidirectional, asymmetric data link with the reception timeslots Rxl and transmission timeslots Txl in the timeslots ZS1 . . . ZS6 with the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, that the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** maintains a further bidirectional data link to another mobile station in the timeslots ZS7, ZS8, and that the mobile station MS1 . . ~~{.MSn}~~**[. MSn]**, MSn+1. . ~~{..MSn+m}~~**[. MSn+m]** initiates a second monitoring mode, for handing off information which is relevant to telecommunications networks, by monitoring M, for example, on the second frequency fZ in the timeslots ZS7, ZS8, in order to transmit the asymmetric data link at a maximum data transmission rate, which can be predetermined, in the downlink direction and at a minimum data transmission rate, which can be predetermined, in the uplink direction via the base stations BS1.1. . ~~{.BS1.6}~~**[. BS1.6]**.

Figure 4 shows that the mobile station MS1 . . ~~{.MSn, MSn+1. . .MSn+m}~~**[. MSn, Msn+1 . . . MSn+m]** maintains a bidirectional, asymmetric data link with the reception timeslots Rxl and transmission

timeslots Txl in the timeslots ZS1... ZS6 with the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, that the mobile station MS1. . .MSn, MSn+1. . .MSn+m initiates the second monitoring mode for handing off information which is relevant for telecommunications ~~{connections}~~ **[connec-tions]** by monitoring M~~{, for example, on}~~**[. On]** the third frequency f3 in the timeslots ZS7, ZS8, in order to transmit the asymmetric data link at a maximum data transmission rate, which can be predetermined, in the downlink direction and at a minimum data transmission rate, which can be predetermined, in the uplink direction via the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, and that the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** initiates the second monitoring mode for handing off information which is relevant for telecommunications connections by monitoring M ~~{for example, on}~~**[. On]** the second frequency fZ in the timeslots ZS7, ZS8, in order to transmit the asymmetric data link at a maximum data transmission rate, which can be predetermined, in the downlink direction and at a minimum data transmission rate, which can be predetermined, in the uplink direction via the base station BS1, BS2, BS1.1 . . ~~{.BS1.6.}~~**[. BS1.6.]**

Figure 5 shows that the mobile station MS1 . . ~~{.MSn, MSn+1. . .MSn+m}~~**[. MSn, Msn+1 . . . MSn+m]** maintains a bidirectional asymmetric data link with the reception timeslots 3x1 and transmission timeslots Txl in the timeslots ZS1 . . . Z57 with the base station BS1,

BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, and that the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** initiates the second monitoring mode for handing off information which is relevant to telecommunications connections by monitoring M~~{, for example, on}~~**[. On]** the second frequency fZ in the timeslot ZS8, in order to transmit the asymmetric data link at a maximum data transmission rate, which can be predetermined, in the downlink direction and at a minimum data transmission rate, which can be predetermined, in the uplink direction via the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6.}~~**[. BS1.6.]**

Figure 6 shows that the mobile station MS1 . . ~~{.MSn}~~**[. MSn]**, MSn+1. . .MSn+m maintains a bidirectional asymmetric data link with the reception timeslots Rxl and transmission timeslots Txl in the timeslots ZS1 . . . ~~{.ZS7}~~ **[ZS7]** with the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, and that the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** initiates the second monitoring mode for handing off information which is relevant to telecommunications ~~{connections}~~ **[connec-tions]** by monitoring M~~{, for example, on}~~**[. On]** the second frequency f2 in the timeslot ZS8, in order to transmit the asymmetric data link at a minimum data transmission rate, which can be predetermined, in the downlink direction and at a maximum data transmission rate, which can be predetermined, in the uplink direction via the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6.}~~**[. BS1.6.]**

Figure 7 shows that the mobile station MS1. . .MSn, ~~{MSn+1. . .MSn+m}~~ **[Msn+1 . . . MSn+m]** maintains a bidirectional, asymmetric data link with the reception timeslots 3x1 and transmission timeslots Txl in the timeslots ZS1 . . . ~~{.ZS7}~~ **[ZS7]** with the base station BS1, BS2, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, that the mobile station MS1. . .MSn, MSn+1. . .MSn+m initiates the second monitoring mode for handing off information which is relevant to telecommunications ~~{connections}~~ **[connec-tions]** by monitoring M~~{, for example, on}~~**[. On]** the third frequency f3 in the timeslot ZS8, in order to transmit the asymmetric data link at a minimum data transmission rate, which can be predetermined, in the downlink direction and at a maximum data transmission rate, which can be predetermined, in the uplink direction via the base station BS1, BSZ, BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]**, and that the base station BS1.1 . . ~~{.BS1.6}~~**[. BS1.6]** initiates the second monitoring mode for handing off information which is relevant to telecommunications connection by monitoring M~~{, for example, on}~~**[. On]** the second frequency f2 in the timeslot ZS8, in order to transmit the asymmetric data link at a minimum data transmission rate, which can be predetermined, in the downlink direction and at a maximum data transmission rate, which can be predetermined, in the uplink direction via the base station BS1.1 . . ~~{.BS1.6.}~~**[. BS1.6.]**

~~{Patent Claims}~~ **[Although preferred embodiments of the invention have been described herein, it is to be understood that the**

invention is not limited to these embodiments, and that various changes and modifications thereto may be made without departing from the scope or spirit of the invention, which is defines by the following claims. - -